Wednesday, August 28, 2024 12:

$$\begin{array}{lll}
x(t) = 0.87 & c.s(2\pi 441t) \\
= c.s(\frac{\pi}{6}) & c.s(2\pi 441t) \\
y(t) = -0.5 & s.c. (2\pi 441t) \\
= -0.5 & c.s. (2\pi 441t - \frac{\pi}{2}) & \leftarrow \\
= -0.5 & c.s. (2\pi 441t - \frac{\pi}{2}) & \leftarrow \\
= -s.c.(\frac{\pi}{6}) & c.s.(2\pi 441t - \frac{\pi}{2}) & \leftarrow \\
x(t) = Re(c.s.(\frac{\pi}{6}) e^{j2\pi jk}) = Re(xe^{j2\pi jk}) \\
x(t) = Re(-s.c.(\frac{\pi}{6}) e^{j(2\pi jk} - \frac{\pi}{2})) = Re(xe^{j2\pi jk})
\end{array}$$

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$$\sim$$

$$|X+Y| = \sqrt{|X|^2 + |Y|^2}$$

$$= \sqrt{\cos^2(\frac{T}{6}) + \sin^2(\frac{T}{6})} - 1$$

$$X(X+Y) = \tan^{-1}(\frac{\sin(\frac{T}{6})}{\cos(\frac{T}{6})}) = \frac{T}{6}$$

$$Z(Y) = Re((X+Y) e^{\int 2\pi f_4})$$

$$= Re(e^{\int \frac{T}{6}} e^{\int 2\pi f_4})$$